

Patent claims

1. A device (1) for controlling several inductive  
5 loads (111, 112), characterized in that it includes:  
- at least one first group of several control stages  
(321, 322) each having:  
- a bonding pad (331, 332) for an inductive load  
(321, 322);  
10 - a receive input (301, 302) for a conduction  
activate signal;  
- a switch (121, 122) including a control  
electrode connected to the receive input, and  
an output electrode connected to the bonding  
15 pad;  
- an enabling circuit (181, 182), measuring the  
voltage applied to the bonding pad (331, 332)  
and generating an enabling signal when this  
voltage reaches an enabling level;  
20 - a conduction re-activate circuit (2) common to the  
control stages of the group, limiting the voltage  
on the bonding pad of the control stages of the  
group to a common level that is higher than the  
enabling level of each control stage of the group  
25 and applying a conduction activate signal to the  
control electrode for the switch of one of the  
control stages when the enabling circuit of this  
control stage generates an enabling signal.
- 30 2. The control device as claimed in claim 1,  
characterized in that the switch (121, 122) of each  
control stage of the group is a MOS transistor, the  
gate of which is the control electrode, the drain is  
the output electrode, and the source is connected to  
35 ground.
3. The control device as claimed in claim 1 or 2,  
characterized in that the conduction re-activate

circuit includes a Zener diode (21) connected in such a way as to substantially limit to its Zener voltage the voltage on the bonding pads of each of the control stages of the group.

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4. The control device as claimed in any one of the preceding claims, characterized in that the enabling circuit of each of the control stages includes a Zener diode (181, 182) connected between the output electrode and the control electrode its Zener voltage defines the enabling threshold.

5. The device as claimed in claim 4, characterized in that each control stage additionally includes a selection circuit having a selection input (191, 192), disabling means (151, 152) disabling the application of the conduction re-activate signal from the common conduction re-activate circuit to the control electrode of the switch (121, 122) of this stage when a deselection signal is applied to its selection input, and means for applying a conduction re-activate signal

to the control electrode of this switch when the voltage on the associated control pad reaches the enabling threshold of the associated enabling circuit.

5 6. The device as claimed in any one of claims 3 to 5, characterized in that it includes at least one second group of control stages similar to the first group, the Zener diodes of their respective conduction re-activate circuit being connected together in  
10 parallel.

7. The device as claimed in claim 6, characterized in that each group of control stages is produced on a separate board.  
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8. A system including a control device as claimed in any one of the preceding claims, characterized in that it includes a DC power supply ( $V_{br}$ ), several loads each having a first terminal connected to the bonding  
20 pad of an associated control stage, and a second terminal connected to the DC power supply.

9. The system as claimed in claim 8, characterized in that the level of the DC power supply ( $V_{br}$ ) is lower  
25 than the enabling threshold of each control stage.

10. The system as claimed in claim 8 or 9, characterized in that several inductive loads are solenoids for actuating an injector needle.